

Aide-Memoire: Data as a strategic asset

To:	Hon Chris Hipkins, Minister of Education
From:	Mathew Pawley, Deputy Chief Executive, Information
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The TEC relies upon data to invest, monitor and provide information

1. This paper provides an overview on the progress the Tertiary Education Commission (TEC) is using to creating an environment where data can be easily collected and shared.
2. Good reliable data is essential to the TEC fulfilling its responsibility of managing, monitoring and reporting on its investment in tertiary education. Key to fulfilling this responsibility is creating a data ecosystem where data is easily collected and shared across the education sector, across other government agencies and with those outside of government who could gain value from using our data.
3. We recommend that this aide-memoire is proactively released in full.

We collect data through different systems, at different frequencies and for different purposes

4. Core to our function is the data we collect through three major data collection systems.

STEO which includes the Single Data Return (SDR)

5. STEO is used by Universities, Te Pūkenga, Wānanga and Private Training Establishments (PTEs).
 - We collect data on about 400,000 domestic and international learners including what they are studying, where they are studying and whether they have been successful or not.
 - Data is currently collected three times per year in April, August and December. This collection frequency is aligned with the trimester based academic year.
 - STEO holds Tertiary education organisation (TEO) qualification and course registers. The course register includes course tuition fees and compulsory course costs but not compulsory student services fee.
 - An indicative return is collected at the beginning of March. This return uses a simplified set of business validation rules. It is used for forecasting and in identifying any aggregate changes in enrolment patterns from the prior year. The data in the return is not robust enough to be used for detailed analysis and insights.

Industry Training Register (ITR)

6. The ITR is used by Transitional Industry Training Organisations (TITOs) and will be used by those organisations picking up arranging training functions from TITOs.
 - The ITR collects industry training data on about 130,000 industry trainees and apprentices. This includes data about the learner, what they are studying, what study they have completed, where they are employed and who they are employed with.
 - Data can be collected daily depending on the TITO's data submission practices. This more frequent collection means data is sent as employees start industry training during the year. Each month, using the data submitted, the TEC calculates TITO funding and performance information.
 - The ITR uses NZQA's data to validate qualification and unit standard data submitted. Fees payable to TITOs by trainees and apprentices is not collected through the ITR.

Workspace2

7. Workspace 2 is used by Universities, Te Pūkenga, Wānanga, PTEs, TITOs and schools.
 - Frequency of when data is provided to the TEC depends on the type of return. Some are annual, and others such as Fees Free are monthly.
 - Workspace2 is used to collect a range of data and information including:
 - Education Performance Indicator commitments
 - Mix of provision where TEOs indicate their planned delivery of courses for future years
 - Fees Free eligibility, enrolments, costs and consumption
 - Targeted Training Apprenticeship Fund (TTAF) enrolments
 - Actual delivery data for smaller funds such as Gateway and Workplace Literacy
 - Documents exchanged between the TEC and the sector

Data is shared amongst education agencies

8. The Ministry of Education (MoE) TEC and NZQA share data as part of conducting core business. Data is also shared as part of gaining insights to what is happening across the sector.
9. Examples of what is shared are:
 - SDR data is currently received by the MoE and made available to the TEC as it is submitted by TEOs
 - The TEC provides a monthly feed of ITR data to the MoE.
 - Fees Free data is shared with the MoE
 - SDR data is shared with Tribal who operate the New Zealand Benchmarking Marking Tool (NZBT). NZBT is used by Universities, Te Pūkenga and Wānanga to assess relative financial and educational performance
 - The TEC uses NZQA's data to validate programme enrolments and to monitor credit and programme achievement of learners enrolled in industry training
 - MoE provides a yearly view of school leavers to the TEC which it uses to track secondary to tertiary transitions.

Data is also shared with the tertiary sector, schools and other interested parties

10. Information is shared with the tertiary sector, schools and other interested parties via TEC's Ngā Kete portal. This portal provides a user friendly highly visual format for exploring and extracting information. Examples of what is available via Ngā Kete and the insights that can be gained are included at the end of this report.
11. Data is shared at a detailed level with the TEO that provided the information. This is done to reflect back the data the TEC holds for that TEO and what data is used in calculating investment and performance metrics.
12. Data is shared in an aggregated anonymised form with:
 - TEOs where they can compare learner characteristics, enrolments and performance with other TEOs.
 - Schools where they can see where their learners go in tertiary, to what TEO, into what level of study and what subject areas
 - Regional economic development agencies where they can see the type of learner who is in tertiary in their region, what they are that studying and how this compares to other regions. They can also see the movement of school leavers out of their region to study.
 - Iwi who can see learners who identify with their iwi, where they are studying, how they are performing and for younger learners what schools they came from
 - Government agencies including The Treasury, MBIE and all education agencies.
13. Information is also shared through TEC's Key Information Dataset (KIS). The data set is at a qualification level and includes information on qualification entry requirements, average student fees, government tuition subsidy, student success metrics and post study outcomes. The data in the KIS data set is made available to interested learners and other parties through TEO websites, TEC's Careers web site and third party websites.
14. The TEC uses Statistics New Zealand's Integrated Data Infrastructure (IDI) to create a view of learner post study outcomes. This view includes at a national, regional and TEO level employment and income outcomes. This information is shared via the Ngā Kete portal.

The Data Exchange Platform will change how we collect data

15. The data exchange platform (DXP) project is replacing the ageing technologies that support the STEO and Workspace2 collections with a single platform. This will provide a cost-effective and relevant platform to meet the sector's ongoing needs for data collection and distribution. DXP is not changing what data we collect from the sector, nor the frequency, but it will provide the basis for these changes in the near future.
16. We recently reviewed the scope and phasing of DXP. This was partly due to the impacts of the COVID-19 pandemic, and to better support alignment to the changes and readiness of the sector with the RoVE implementation. The review identified that the complexity of outstanding work was not fully understood and an overall six month delay is now expected.
17. The first phase of DXP, the implementation of the Workspace2 functionality, is now scheduled for September 2021. The second phase, the replacement of STEO and SDR functionality is now scheduled for June 2022.
18. As a core TEC system DXP is being funded solely from TEC's capital expenditure and is currently projected to cost \$7.5 million.

More live/real-time data on trends in enrolment is a priority for me.

DXP will support the implementation of RoVE

- 19. Once the initial release of DXP is in place, we will be well placed to start transforming our data collection processes, with the aim of reducing some of the sector compliance costs and complexity related to data collection in the sector as well as **increasing the richness and timeliness of the data.**
- 20. The DXP project will work closely with the sector to co-design and implement two additional industry standard collection methods - Application Programming Interfaces (APIs) and Web Forms. These data collection methods will give us the opportunity to increase the breadth of data we collect (for example student application and enrolment data) in a much more efficient manner. **The move to APIs will also enable us to collect data much more frequently in an automated fashion from TEOs.**
- 21. The new DXP will support the changes arising through Reform of Vocational Education (RoVE) and will be working with the Unified Funding System (UFS) project to identify changes required to TEC's collection and other systems to support the implementation of this key RoVE initiative.
- 22. The changes in collection methods will require TEOs to also make changes to a number of their core systems and processes. We need to be mindful about minimising the impact of change and be prudent about when and how we introduce these changes, especially when considering the other significant changes being undertaken in the sector currently. However for avoidance of doubt the initial release of DXP requires no TEO end changes at all.
- 23. We have already set up a project to understand these likely changes so we can start engaging with the sector as early as possible. With the new release date for DXP we will be running a combined change management process across DXP and UFS technology changes.

DXP is part of the TEC meeting future information needs

- 24. The TEC is aware that one of its key roles is operating a data eco system that creates value for a wide range of organisations inside and outside of government.
- 25. What we need to collect and share is also changing.
- 26. The tertiary sector's information needs are evolving in response to changes in education delivery, the employment market and digital transformation.
- 27. The information needs of those outside of education, such as Regional Skill Leadership Groups and Workforce Development Councils, are also evolving as they look to influence and shape what is needed from education.
- 28. The RoVE operational readiness project work currently underway within the TEC is considering how best to integrate these new data streams into DXP and associated systems.
- 29. In this environment DXP is a cornerstone to TEC's data journey and when fully implemented will improve the way we process, use, manage, and make data available.

Mathew Pawley
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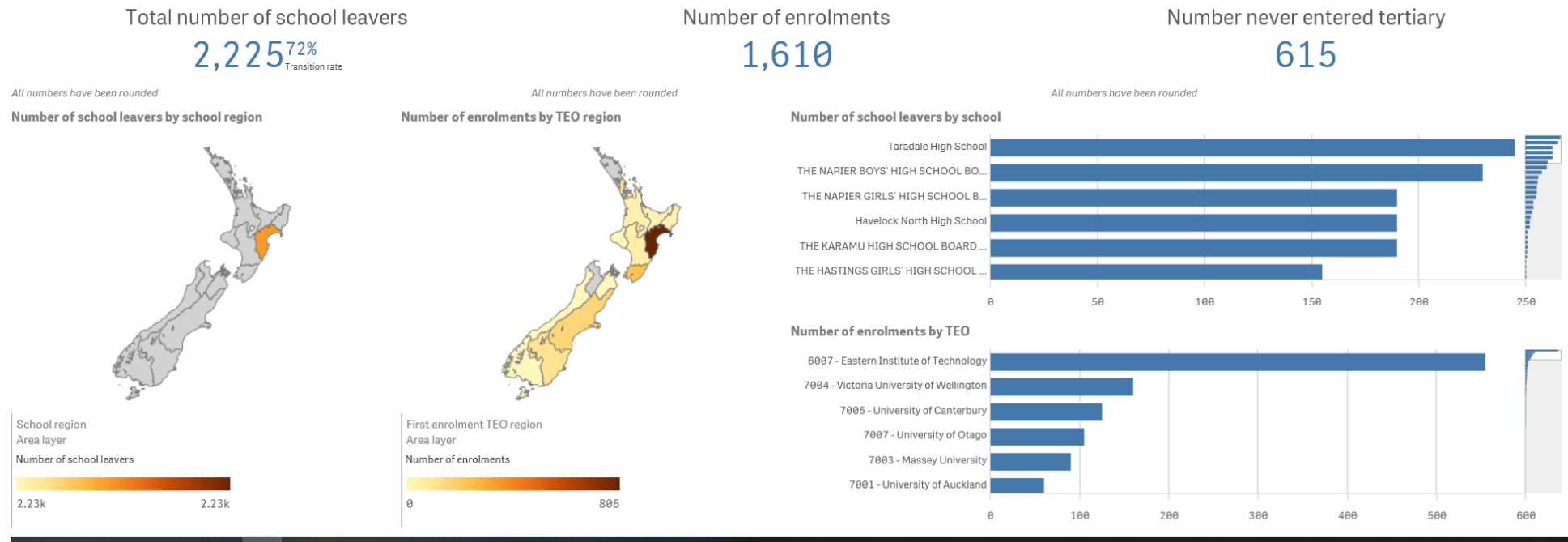
30 June 2021

Hon Chris Hipkins
Minister of Education

19 / 7 / 21

Appendix 1 - Examples of data we share with the tertiary sector, schools, economic development agencies, iwi and other government agencies

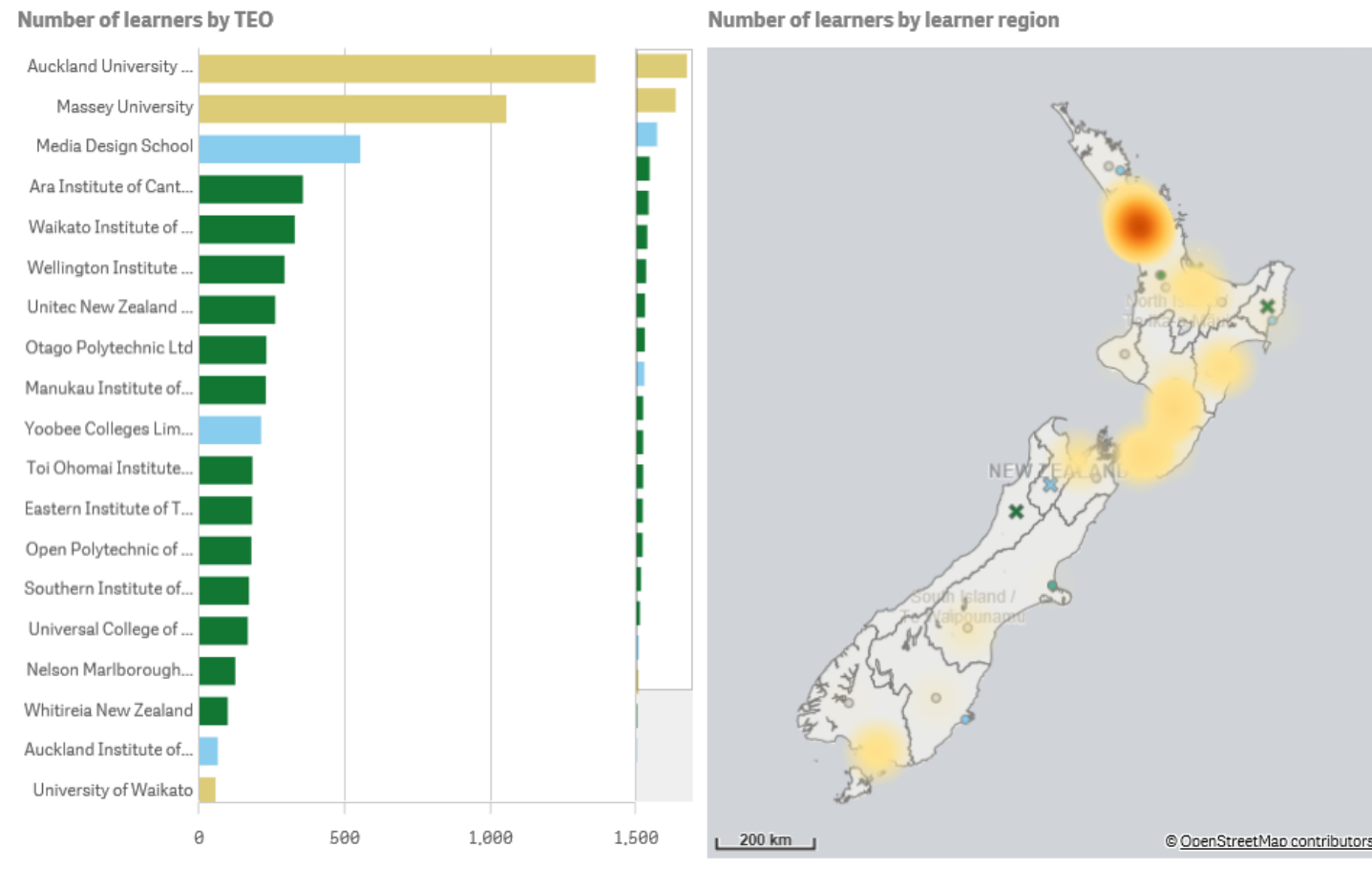
Where 2019 school leavers from the Hawkes Bay first enrolled in tertiary



Most school leavers enrol locally at EIT

Next most common destination is Victoria University of Wellington

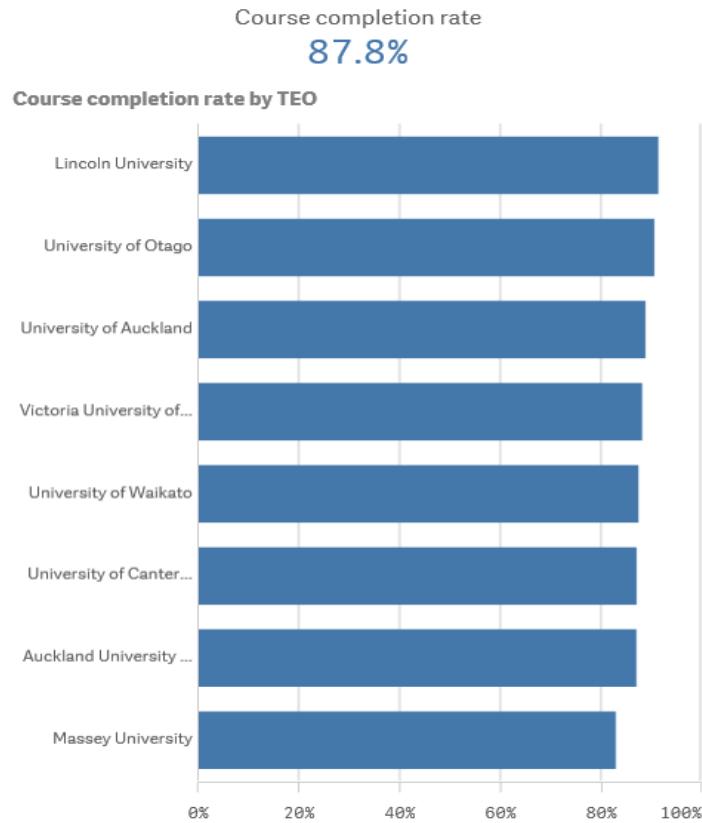
Appendix 2 - National view of learners enrolled in degree level information technology qualifications



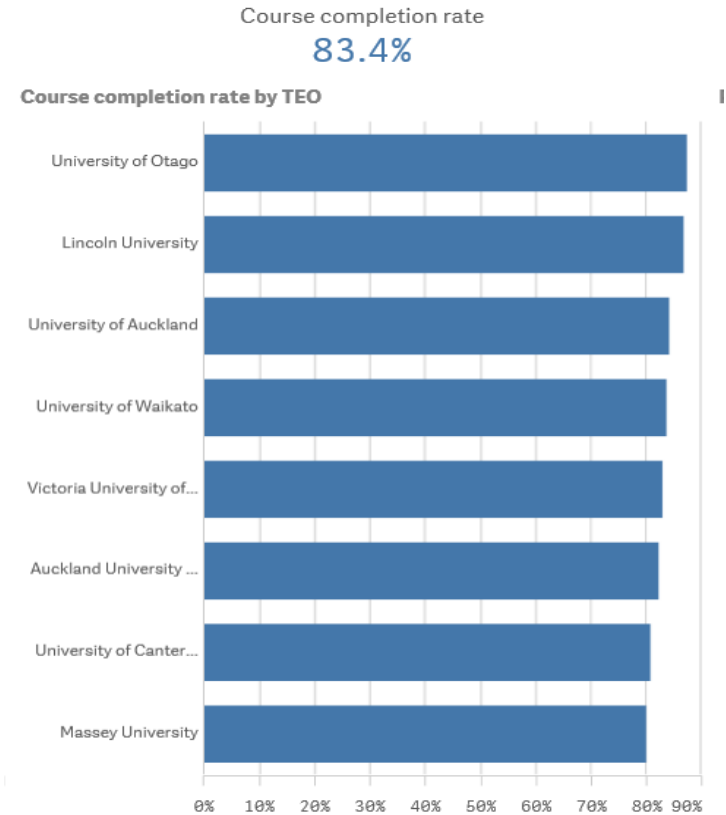
Most learners in this area are either are enrolled at Auckland University of Technology or Massey University
 Outside of Ara there are few TEOs offering degree level information technology qualifications in the Canterbury region

Appendix 3 - Completion rates by gender by TEO

Couse completion rates across the eight universities for female learners enrolled in degree level study



Couse completion rates across the eight universities for male learners enrolled in degree level study

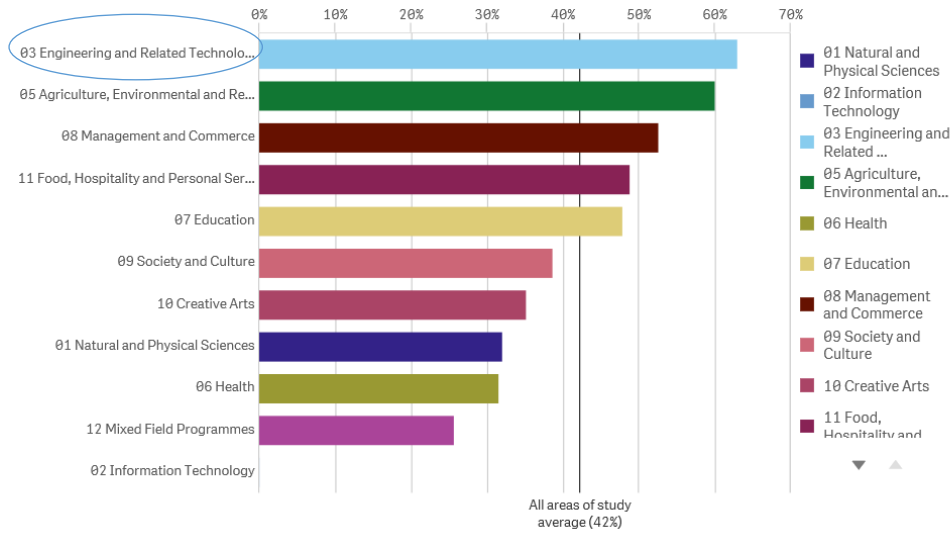


Females on have higher course completion rates (three to six percentage points across the universities)

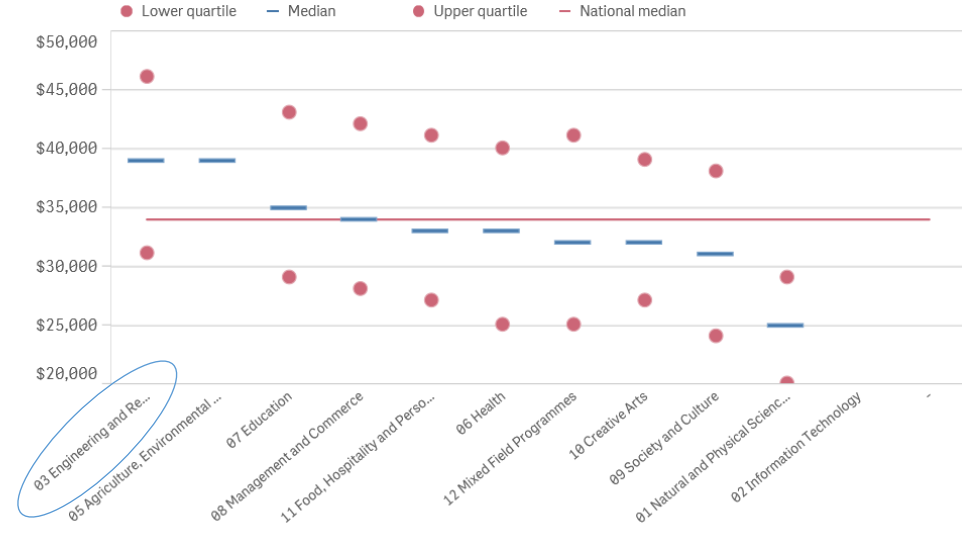
Females enrolled at Lincoln have the highest course completion rates

Appendix 4 - Employment outcomes for female Māori graduates aged under 25 living in Auckland one year after completing a level 4 to 7 non degree qualification

Percentage of graduates employed



Income for employed graduates by quartiles



Engineering has the best employment and income outcome

Those with Engineering, Agriculture and Education qualifications earn above the national median compared to similar graduates

Appendix 5 - A learner journey view, what we know, what is shared and insights that can be gained

